



REVISED 5-7-87

FAILURE EFFECT CAUSE Solver ON/OFF CMD No wrist video. DESIGN FEATURES The W8 wrist/TVC cable is a 19-inch long assembly, 14-wire assembly originating at RMS wrist with a 26-pin connector (P11, PV6636S26PMD16) and terminating at a TVC will remain a second solver. Loss of mission critical 37-pin connector (P1, KJ66E14W35SN16). The video and sync wires are shielded #24.1				
CAUSE GH FMD TEM RATIONALE FOR ACCEPTANCE Ro mrist video. Norst Case: Loss of mission critical video. Norst Case: Loss of mission critical video. Norst Case: Loss of mission critical video. DESIGN FEATURES The W8 wrist/TVC cable is a 19-inch long assembly, 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly. 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly. 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly. 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly. 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly. 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly, 14-wire assembly originating at TVC wideo. The wise wrist/TVC cable is a 19-inch long assembly, 14-wire assembly originating at TVC will wrist and the connector and symmetres are ticalded from the wire and the connector the RVS to the wore elbow camera stack. The cable design is taken from the successfully flown Apollo program. The design is able to an advant or the wire and the connector terminal. The long concentration is moved away from the conductor connection and distributed axially a the length of the conductors encapsulated in a potted-taper profile. This technique also protects the assembly from the conductor connection and distributed axially a the length of the conductors encapsulated in a potted-taper profile. This technique also protects the assembly from the successfully flown Apollo program. The design of the connector from the successfully flown Apollo program. The design of the connector from the successfully flown Apollo program. The design of the connector flow and the connecto	CRITICALITY 2/2	_ _	SHUTTLE CCTV CRITICAL ITEMS LIST	DMG NO. 2793289-501 1880ED 10-14-86
In/Short to GMD Norst Case: Loss of mission critical video. The W8 wrist/VVC cable is a 19-inch long assembly, 14-wire assembly originating at IMS wrist with a 25-pin connector (P11, PY6616S26PMD16) and terminating at a TVC wideo. The W8 cable provides power and commands from the RVS to the world or elbow camera stack. The cable design is taken from the successfully flown Apollo program. The design is cable-connector assembly in which the wire terminations are protected from excessive flexture at the foint between the wire and the connector terminal. The load concentration is moved away from the conductor connection and distributed axially a the length of the conductors encapsulated in a potted-taper profile. This technique also protects the assembly from dirt and entrapped moisture which could cause problem space. The cable and its components meet the applicable requirements of NASA, Military and specifications. These requirements include: General/Rechanical/Electrical Features Obsign and Construction Materials Training 1 Solderability Environmental Qualification Marking and Serialization			RATIONALE FOR ACCEPTANCE	
IMS wrist with a 26-pin connector (PII, PY66i6S26PMD16) and terminating at a TVC of 37-pin connectur (PI, KJ66i14M35SNI6). The video and sync wires are shielded f24 I wisted-pair wires. The W6 cable provides power and commands from the RVS to the worldware assembly in which the wire terminations are protected from excessive flexture at the joint between the wire and the connector terminal. The load concentration is moved away from the conductor connection and distributed axially a the length of the conductors encapsulated in a potted-taper profile. This technique also protects the assembly from dirt and entrapped moisture which could cause problem space. The cable and its components meet the applicable requirements of NASA, Military and specifications. These requirements include: General/Mechanical/Electrical Features Ossign and Construction Materials Terminal Solderability Environmental Qualification Materials April 17. PY66i6S26PMD16 and terminating at a TVC with the vice of the vice are shielded f24 I wisted and sync wires are shielded for the wire terminations are protected from excessive flower and connected and sync wires are shielded field with the wire terminations are protected from excessive flower and sync wires are shielded from the wire and the violent and sync wires are shielded from the wire and the violent and sync wires are shielded from the wire and the violent and sync wire are shielded from the violent and sync wire are shielded from the wire and the violent a	s of power ON/OFF CMD	No wrist video.	DESIGN FEATURES	
cable-connector assembly in which the wire terminations are protected from excessive flexture at the joint between the wire and the connector terminal. The load concentration is moved away from the conductor connection and distributed axially a the length of the conductors encapsulated in a potted-taper profile. This technique also protects the assembly from dirt and entrapped moisture which could cause problem space. The cable and its components meet the applicable requirements of MASA, Military and specifications. These requirements include: • General/Mechanical/Electrical Features • Design and Construction • Materials • Terminal Solderability • Environmental • Qualification • Marking and Serialization	n/Short to GMD	Loss of mission critical	The W8 wrist/TVC cable is a 19-inch long assembly, 14-wire assembly originating at the RMS wrist with a 26-pin connector (P11, PV6G16S26PMD16) and terminating at a TVC with 37-pin connector (P1, KJG6E14N35SN16). The video and sync wires are shielded #24 Twint twisted-pair wires. The W8 cable provides power and commands from the RVS to the wrist or elbow camera stack.	
specifications. These requirements include:		·	cable-connector assembly in which the wire terminations flexture at the joint between the wire and the connector concentration is moved away from the conductor connection the length of the conductors encapsulated in a potted-to also protects the assembly from dirt and entrapped moisi	are protected from excessive r terminal. The load on and distributed axially along moer profile. This technique
			specifications. These requirements include:	ements of MASA, Military and RCA
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FMEA NO. W 8.16 CRITICALITY 2/2		SHUTTLE CCTY	UNIT Cable DWG NO- 2291289-501 1880E0 10-14-86
		CHITICAL TYENS LIST	SHEET 2 UF 5
FAYLURE MODE AND CAUSE	FATEURE EFFECT ON END ITEM	RATIONALE FOR ACCEPTANCE	
s of power ON/OFF CMD	No wrist video.	QUALIFICATION TEST	
s of power ON/OFF CMD n/Shart to GND	Worst Case: Loss of mission critical video.	Qualified by 1.) similarity to previous successful signalification tests of CCTV LRUs. ACCEPTANCE FEST The cable acceptance test consists of an ohumeter charaction is present and intact. Results are recommection is present and intact. Results are recommetted in the present and intact. Results are recommendated in the following tests verify that ECTV components are the present panel switch, through the RCU, through the present proper. The total the Camera/PTU command decoder are proper. The total lity to produce video, the VSU's ability to route display video. A similar test verifies the MDH comment pre-launch on Orbiter Test/In-Flight Jest 1. Power CCTV System. 2. Select a monitor via the PHS panel, as destinated source. 3. Send "Camera Power On" command from PHS panel. 4. Select "Enternal Sync" on monitor. 5. Observe video displayed on monitor. If video of stable raster, then this indicates that the camera test producing select One of the test producing select One of test	eck to assure that each wire ded on data sheets. operable and that the commands from high the sync lines to the Comera/PTU, ests also verify the camera's video and the monitor's ability to and path. ion and the camera under test as monitor is synchronized (i.e., mera is receiving composite sync ynchronized video, ands and visually (either via the eration.
		9. Send "Camera Power Off" command via PHS panel. 10. Repeat Steps 3 through 9 except issue commands proves that the CCTV equipment is operational i	via the MOM command path. This f video is satisfactory.

REVISED 5-7-87 Савле UNIT H 8.16 FMEA NO. 2293209-501 SHUTTLE CCTV DMG NO. CRITICAL ITEMS LIST 1SSUED 10-14-86 CRITICALITY 2/2 SHEET FAILURE MODE AND FAILURE EFFECT CAUSE ON END ITEM RATIONALE FOR ACCEPTANCE

ass of power ON/OFF CMD

pen/Short to GNO

No wrist video.

Worst Case:

Loss of mission critical video.

QA/INSPECTION

Procurement Control - Wire, connectors, solder, etc. are procured from approved vendors and suppliers which meet the requirements set forth in the CCTV contract and Quality Plan Work Statement (MS-2593176).

Incoming Inspection & Storage - Incoming Quality inspections are made on all received materials and parts. Results are recorded by lot and retained in file by drawing and control numbers for future reference and traceability. Accepted Items are delivered to Material Controlled Stores and retained under specified conditions until cable fabrication is required. Mon-conforming materials are held for Material Review Board (MRB) disposition. (PAT-307, PAT 10C-53).

Assembly & Test - Prior to the start of assembly, all items are verified to be correct by stock room personnel as the items are accumulated to form a kit. The items are verified again by the operator who assembles the kit by checking against the as-built-parts-list (ASPL).

Specific instructions are given in assembly drawing notes and applicable documents. These are 2280800 - Process Standard crimping flight connector contacts, 2280800 - Process Standard in-line splicing of standard interconnecting wire using Raychem solder sleeves, 2280876 - Process Standard marking of parts or assemblies with epoxy colors, 2280876, Potting material and test procedure (TP-AT-2293289). Quality and OCAS inspections are performed at the completion of tey operations.

Preparation for Shipment - When fabrication and test is complete, the cable assembly is packaged according to 2700746, Process Standard for Packaging and Handling Guidelines. All related documentation including assembly drawlings, Parts List, ARPL, Test Data, etc. is gathered and held in a documentation folder assigned specifically to each cable assembly. This folder is retained for reference.

<u>-</u>		 -	UNIT Cable	
FMEA NO. <u>M 8.16</u>		SHOTTLE CCTV CRITICAL ITEMS LIST	UNIT CASTE DWG NO. 2293289-501 ISSUED 10-14-86 SHEET 0 OF 5	
CRITICALITY 2/2			Jan. 17 51	
FAILURE MODE AMD CAUSE	FATLURE EFFECT ON END JIEM	RATIONALE FOR AC	CEPTANCE	
ss of power OM/OFF CMB	No wrist video.	FAILURE HISTORY		
en/Short to GMD	Warst Case:	There have been no reported failures during RCA	testing, pre-flight or flight.	
	Loss of mission critical video.		·	
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FMEA NO N 8.16 CRITICALITY		SHUTTLE COTY CRITICAL ITEMS LIST	UNIT Cable DWG NO. 2293289-501 ISSUED 10-14-86 SHEET 5 OF 5
FAILURE MODE AND FAILURE EFFECT CAUSE ON END ITEM		RATIONALE FOR ACCEPTANCE	
oss of pawer ON/OFF CHD Den/Shart to GNO	Mo wrist video. <u>Horst Case</u> : toss of mission critical video,	OPERATIONAL EFFECTS Loss of video. Possible loss of major mission other required comeras. CREW ACTIONS If possible, continue RMS operations using all CREW TRAINING Crew should be trained to use possible alternated to the possible alternated to the possible alternated to the possible procedures should be designed as the possible procedures as the possible procedures are possible procedures.	n objectives due to loss of RMS cameras or ternate visual cues. ates to CCTV.